

AMENDMENT TO THE TITLE OF THE INVENTION

Please replace the original title of the invention with the following rewritten title.

A CONFOCAL OPTICAL SYSTEM APERTURE DETECTOR THAT MEASURES A
LIGHT QUANTITY BALANCE OF LIGHT RECEIVED TO DETECT A POSITION
DISPLACEMENT, AND A CONFOCAL OPTICAL SYSTEM APERTURE POSITION
CONTROLLER, AN OPTICAL HEAD AND A POSITION DETECTING METHOD
PERFORMING THE SAME

AMENDMENTS TO THE SPECIFICATION AND ABSTRACT

In the specification, pages 1 and 2, paragraph [0002], please amend as follows:

In order to increase a ~~recoding~~recording capacity of an optical disc, the wavelength of the light source is becoming shorter and the numerical aperture (hereinafter, abbreviated as NA) of the objective lens is becoming larger. For a DVD disc, the light source wavelength and the NA of the objective lens are now 650 nm and 0.6, respectively; however, in an optical system proposed for an optical disc in the next generation, the light source wavelength and the NA of the objective lens are 405 nm and 0.85, respectively. In order to further increase the capacity, a multi-layer optical disc formed by laminating a number of information layers in the thickness direction of the optical disc at predetermined intervals is currently under development.

In the specification, page 12, the title preceding paragraph [0018], please amend as follows:

~~Best Mode for Carrying Out the Invention~~

Detailed Description of the Invention

In the specification, page 32, paragraph [0059], please amend as follows:

(4) A confocal optical system aperture position detector is the confocal optical system aperture position detector set forth in any one of (1) through (3) above, wherein it is preferable that a material of the aperture is an electrically good conductor (i.e., an electrical conductor).

In the specification, page 45, paragraph [0081], please amend as follows:

According to this configuration, the detector outputs a high frequency signal and a low frequency signal. The high frequency signal is chiefly a signal from pits recorded in the optical ~~recoding~~recording medium and the low frequency signal is chiefly a signal associated with the occurrence of a position displacement between the aperture and light that passes by the aperture. Hence, the control means controls the first driving means according to a high frequency signal from the detector, and aligns the position in the tracking direction, for example, by the phase difference method. Also, the control means controls the second driving means according to a

low frequency signal from the detector to align the positions of the aperture and light that passes by the aperture. By using the high frequency signal and the low frequency signal properly in this manner, the optical head according to an invention of the present application becomes compact and inexpensive, and is yet capable of adjusting efficiently the position of light that comes incident on the optical recording medium as well as the position of light that passes by the aperture.

In the specification, page 48, paragraph [0086], please amend as follows:

According to this configuration, the detector outputs a high frequency signal and a low frequency signal. The high frequency signal is chiefly a signal from pits recorded in the optical ~~recoding~~recording medium and the low frequency signal is chiefly a signal associated with the occurrence of a position displacement between the aperture and light that passes by the aperture. Hence, the control means controls the first driving means according to a high frequency signal from the detector, and aligns the position in the tracking direction, for example, by the phase difference method. Also, the control means controls the second and third driving means according to a low frequency signal from the detector to align the positions of the aperture and light that passes by the aperture in directions perpendicular to and parallel to the optical axis. By using the high frequency signal and the low frequency signal properly in this manner, the optical head according to an invention of the present application becomes compact and inexpensive, and is yet capable of adjusting efficiently the position of light that comes incident on the optical recording medium as well as the position of light that passes by the aperture.

In the Abstract, please amend as follows:

In a confocal optical system ~~provided with~~ having a light source 13, a first focusing means 14, a second focusing means 16, an aperture 17, and a detector 18, ~~the detector has plural~~ including a plurality of light reception regions. ~~A~~ a position displacement is detected by detecting an intensity distribution of an image caused by a position displacement between ~~the a~~ focusing spot of the second focusing means 16 and the aperture 17, by the detector 18. Further, ~~and~~ the position displacement is corrected by controlling the aperture position using driving means 19 and control means 20. Also, a position displacement of the aperture 17 in the optical axis direction is detected and corrected on the basis of a change in an output of the detector 18 by oscillating the aperture 17 in the optical axis direction.